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NOTE

A New Synonym and New Thailand Records of *Cincticostella femorata* (Tshernova) (Ephemeroptera: Ephemerellidae)

Ishiwata (2003) and Jacobus and McCafferty (2003) recently contributed revisions to the mayfly genus *Cincticostella* Allen (Ephemerellidae: Ephemerellinae) (McCafferty and Wang 2000). The Oriental fauna of the genus is relatively poorly known. One such Oriental species, *C. femorata* (Tshernova), is known only from the holotype, a larva collected in June 1968 from the Red River (Song Koi), Bak Tkhai, Vietnam (Tshernova 1972: figs. 5a–i). Gose (1969: figs. 23–37) described a similar species based on two larvae collected from Chanta Buri, Thailand on June 20, 1961. Gose (1969) did not provide a formal name for this species, but Allen (1975) subsequently provided the name *C. boja* Allen. *Cincticostella boja* also is known only from the type material. The two species are differentiated from one another by the presence or absence of small occipital spines on the head; the number of denticles on the claws; the number of paired, submedian, tergal spines on the abdomen; and the relative density of hairlike setae on the segments of the caudal filaments.

We recently examined long series of benthic macroinvertebrate collections taken as part of an extensive inventory of the mayflies and other aquatic insects of Thailand (e.g., Sites et al. 2001, Parnrong et al. 2002). Certain sampling sites in northern Thailand were visited monthly for one year. Examination of a series of specimens from one of these repeatedly sampled sites, and additional material, indicated to us that *C. femorata* is morphologically variable with a mixture of individuals and instars corresponding to the original morphological characterizations of either *C. femorata* or *C. boja*. Intermediate forms also are represented in the samples we examined. Therefore, we recognize a new synonym for *C. femorata* [*Cincticostella femorata* (Tshernova, 1972) = *C. boja* (Allen, 1975), **new synonym**].

Specifically, these specimens demonstrate variation in the development of occipital spines, including an individual with no such spines. The number of denticles on each claw varies from two to four; one individual has two denticles on one claw and four on another. Paired, medial, tergal spines are present on abdominal segments 1-10, 2-10, or 3-10. Hairlike setae are present laterally on the caudal filaments, but the distribution of these setae varies from sparse to dense.

Cincticostella femorata is one of the most striking species of Ephemerellinae. Its head is recessed in a greatly expanded prothorax, and its femora are very broad with serrate margins. These characters combine to give the species a very dorsoventrally flattened appearance. The species also has hairlike setae densely situated along the lateral margins of the abdominal sterna and the posterior margin of sternum 9, reminiscent of certain species of the genus *Drunella* Needham (Jacobus and McCafferty 2004).

Little is known about the biology of *C. femorata*, but at least in Doi Inthanon National Park, larvae were collected consistently from leaf packs near a waterfall. Alate stages have yet to be associated with the larva.

Material examined.—THAILAND: Chiang Mai Prov., Doi Inthanon National Park: creek at twin pagodas, 18°33′N, 98°28′E, 2,119 m, 1-V-2003, L-492, UMC & CMU teams, one larva; Siriphum Waterfall, 18°32′N, 98°31′E, 1,460 m elev., 14-i-2003, 17-ii-2003, 15-iii-2003, CMU team,

leaf pack, three larvae. Mae Hong Son Prov., Namtok Maw Pang, 19°22′N, 98°22′E, 850 m elev., 19-iii-2002, L-305, Sites, Vitheepradit, Kirawanich, one larva.

This material presently is deposited in the Enns Entomology Museum; however, some specimens will be deposited in Thailand with the National Science Museum, Pathum Thani, and the Royal Forestry Department, Bangkok. Photographs of the localities for two of the collections (identified as L-492 and L-305), in which this species was collected, are available in a Locality Image Database via a link from the Internet site of the Enns Entomology Museum, University of Missouri-Columbia.

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